



Certificate No:
TAE00004SR

TYPE APPROVAL CERTIFICATE

This is to certify:

That the High Voltage Cable

with type designation(s)

PANZERFLEX-PUR 6/10 kV 3x185+2x95/2+1x(5x2,5)St+OFE 6G62,5/125

Issued to

Prysmian Cavi e Sistemi Italia S.r.l.
Milano, MI, Italy

is found to comply with

DNV rules for classification – Ships, offshore units, and high speed and light craft

Application :

High voltage shore connection cable.

Products approved by this certificate are accepted for installation on all vessels classed by DNV.

Rated voltage (kV) 6/10

Temp. class (°C) 90

Issued at **Høvik** on **2023-10-06**

This Certificate is valid until **2028-10-05**.

for **DNV**

DNV local unit: **Italy/Malta CMC**

Approval Engineer: **Ivar Bull**

Frederik Tore Elter
Head of Section

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid.
The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV AS, its parent companies and their subsidiaries as well as their officers, directors and employees ("DNV") arising from or in connection with the services rendered for the purpose of the issuance of this document or reliance thereon, whether in contract or in tort (including negligence), shall be limited to direct losses and under any circumstance be limited to 300,000 USD.



Form code: TA 251

Revision: 2022-12

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Product description

PANZERFLEX-PUR 6/10 kV 3x185+2x95/2+1x(5x2,5)St+OFE 6G62,5/125

Construction:

Power conductors:	Plain or tinned copper Class 5
Conductor screen	Semi conducting tape and compound
Core insulation:	EPR
Insulation screen:	Semi conducting compound
Earth cores (2)	Plain or tinned copper Class 5
Conductor screen	Semi conducting layer
Pilot element (150/250V)	Plain or tinned copper Class 5 sizes 1,5-6mm ²
Core Insulation	EPR
Optical fibers	Fibre-elements(optional) 6 optical fibres 62.5/125
Screen around pilot elements	Aluminium/PET tape + Tinned copper drain wire
Outer sheath:	Polyurethane TPU according to EN-50363-10-2

Application/Limitation

Cable is tested according to IEC/IEEE 80005.1 (2022)

Minimum dynamic bending radius:

Static: 6x OD (OD = cable outer diameter)
Dynamic: 8,5 OD

Minimum operating temperatures

Fully flexible - 30 °C
Fixed installation - 40 °C

Conductor resistance after dynamic test: See test report CN22-0075698-01
Attenuation of optic fibres before and after dynamic test: See test report CN22-0075698-01
Cable outer sheath tested for IRM902 mineral oil for 168H @100C.

Type Approval documentation

Tests carried out

Type tests: see test plan.

Dynamic Bending tests: 5000 dynamic cycles at room temperature with bending diameter 10D where D is outer diameter of cable. Tension 8325 N.

Acceptance criteria:

- Max 20% broken conductor wires.
- No broken optical fibres.
- PD at 1.73U₀ after test shall be maximum 10pC.

TPU sheath is tested for IRM 902 mineral oil 168h @100C.

Flame retardant IEC 60332-1-2.

Sunlight resistance test 720h, ISO 4892-2:2013, Tab. 3, test method A, cycle n°1.

Abrasion test on outer sheath, ISO 4649:2010, test method A.

Routine tests:

- Conductor resistance
- Insulation resistance
- HV test 5 minutes @3,5 x U₀

Marking of product

PALAZZO (P) – CAVOFLEX AMP week/year –3x185+2x95/2+(5x2,5)St+6FO(62,5/125) 6/10 kV –
IEC/ISO/IEEE 80005-1 – meter - SHORE CONNECTION CABLE. DANGER! HIGH VOLTAGE – meter or

PALAZZO (P) – PANZERFLEX-PUR week/year –3x185+2x95/2+(5x2,5)St+6FO(62,5/125) 6/10 kV –
IEC/ISO/IEEE 80005-1 – meter - SHORE CONNECTION CABLE. DANGER! HIGH VOLTAGE – meter

(P) = Prysmian Cavi e Sistemi Italia S.r.l. – Merlino - Italy

Periodical assessment

The scope of the periodical assessment is to verify that the conditions stipulated for the Type approval are complied with and that no alterations are made to the product design or choice of materials.

The main elements of the assessment are:

- Inspection on factory samples, selected at random from the production line (where practicable)
- Results from Routine tests (RT) and selected type tests (ref. to applicable class programs) checked (if not available these tests shall be carried out)
- Review of type approval documentation
- Review of possible change in design, materials and performance
- Ensuring traceability between manufacturer's product type marking and Type Approval Certificate.

Periodical assessment is to be performed after 2 years and after 3.5 years. A renewal assessment will be performed at renewal of the certificate.

END OF CERTIFICATE